

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-005373**Date Inspected:** 28-Jan-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 645**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1845**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG Fabrication**Summary of Items Observed:**

CWI: Mr. Sun Bo

On this date CALTRANS OSM Quality Assurance (QA) Inspector Mr. Paul Dawson arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

OBG Bay 9

The QA Inspector monitored welding of closed rib of deck plate DP302-001 using gantry #1. The QA Inspector observed two ZPMC welders using welding procedure specification WPS-B-T-2342-U1(Urib)-4 using the gas metal arc welding process for the root pass of partial penetration groove welds on closed rib welds at the same time. ZPMC has multiple welding manipulators attached to a movable gantry that runs on a track along the length of the stiffener plates. ZPMC QC and ABF representatives were both monitoring this welding. The QA Inspector observed QC had documented a welding travel speed of 535 mm per minute for the root passes. As the welding commences, each of the welders is responsible for one of the welding heads.

Welder Ms. Wang Xiao Rong, stencil 59445 completed the root pass of weld #3 with a welding current of approximately 370 amps and 31.0 volts and the cover pass welding current of approximately 680 amps and 25.7 volts. Welder Mr. Zhao Cheng Shuang, stencil 59400 completed the root pass of weld #4 with a welding current of approximately 360 amps and 31.4 volts completed and the cover pass welding current of approximately 685 amps and 25.3 volts. Items observed by this QA Inspector appear to comply with project specifications.

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This QA Inspector observed ZPMC welder Mr. Han Siqi, stencil 066439 is using flux cored welding procedure WPS B-T-2232-TC-U5F to make stiffener to baseplate welds on OBG deck plate DP545-002-017. Prior to welding the QA Inspector observed the base material had previously been preheated using electrical heater elements. Items observed by this QA Inspector appear to be progressing in compliance with project specifications.

This QA Inspector observed ZPMC welder Mr. Yang Ttianbing, stencil 066439 is using flux cored welding procedure WPS B-T-2232-TC-U5F to make stiffener to baseplate welds on OBG deck plate DP545-002-013. Prior to welding the QA Inspector observed the base material had previously been preheated using electrical heater elements. Items observed by this QA Inspector appear to be progressing in compliance with project specifications.

This QA Inspector observed ZPMC welder Mr. Liu Daiquan, stencil 066401 is using flux cored welding procedure WPS B-T-2232-TC-U5F to make stiffener to baseplate welds on OBG deck plate DP555-001-019. Prior to welding the QA Inspector observed the base material had previously been preheated using electrical heater elements. Items observed by this QA Inspector appear to be progressing in compliance with project specifications.

This QA Inspector observed ZPMC welder Mr. Han Hongwen, stencil 200149 is using flux cored welding procedure WPS B-T-2232-TC-U5F to make stiffener to baseplate welds on OBG deck plate DP555-001-013. Prior to welding the QA Inspector observed the base material had previously been preheated using electrical heater elements. Items observed by this QA Inspector appear to be progressing in compliance with project specifications.

### OBG Bay 3

This QA Inspector performed random ultrasonic (UT) inspections of OBG welds SSD12-PP064-006, FB003-094-032, FB003-094-044. Following random visual inspections of the floor beam welds the QA Inspector concurred with issuance of green tag 3483. This QA Inspector performed random ultrasonic (UT) inspections of OBG welds SSD13-PP066-0132, FB003-092-032, FB003-092-044. Following random visual inspections of the floor beam welds the QA Inspector concurred with issuance of green tag 3482. These welds have previously been tested and accepted by ZPMC Quality Control Inspectors. These welds are listed on ZPMC Notification of Witness Inspection document 001889. The QA Inspector observed the welds that were ultrasonically inspected by this QA Inspector appear to comply with AWS D1.5 UT requirements. For additional information on this inspection see the TL6027 Ultrasonic Test Report.

### OBG Bay 7

This QA Inspector performed random ultrasonic (UT) inspections of OBG welds SP777-001-055, SP499-001-064, SP551-001-055, SP591-001-055, SP737-001-055, SP631-001-055. These welds have previously been tested and accepted by ZPMC Quality Control Inspectors. These welds are listed on ZPMC Notification of Witness Inspection document 001889. The QA Inspector observed the welds that were ultrasonically inspected by this QA Inspector appear to comply with AWS D1.5 UT requirements. For additional information on this inspection see the TL6027 Ultrasonic Test Report.

### OBG Bay 9

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At 1000 hours this QA Inspector performed observed ZPMC ultrasonic (UT) Inspector Mr. Sun Yin performing ultrasonic inspections of OBG Deck Plate closed rib splice welds DP219-001-190, DP219-001-191 and DP219-001-192. The QA Inspector performed a review of ZPMC "Notification of Witness Inspection" documents and it was determined that ZPMC had not informed Caltrans QA personnel that these welds were to be inspected. At around 1030 hours ZPMC presented QA personnel with "Notification of Witness Inspection" document #001889 that states ZPMC will perform ultrasonic inspections of OBG Deck Plate closed rib splice welds DP219-001-190, DP219-001-191 and DP219-001-192, DP219-001-192R1, DP194-001-191R1, DP194-001-192R1, DP194-001-193R1, DP140-001-191R1 and DP140-001-192R1 today at 1030 hours.

This QA Inspector performed random ultrasonic (UT) inspections of OBG closed rib splice welds DP219-001-190R1, DP219-001-191R1, DP219-001-194R1. These welds have previously been tested and accepted by ZPMC Quality Control Inspectors. These welds are listed on ZPMC Notification of Witness Inspection document 001889. The QA Inspector observed the welds that were ultrasonically inspected by this QA Inspector appear to comply with AWS D1.5 UT requirements. For additional information on this inspection see the TL6027 Ultrasonic Test Report.

The QA Inspector observed the following U rib splice welds have been rejected by ZPMC ultrasonic Inspectors: DP219-001-192R1, DP194-001-191R1, DP194-001-192R1, DP194-001-193R1, DP140-001-191R1 and DP140-001-192R1.

### Summary of Conversations:

See above.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Dawson,Paul	Quality Assurance Inspector
<b>Reviewed By:</b>	Clifford,William	QA Reviewer

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